

PATENT

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

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| In re Application of: | : | |
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| Charles A. Lowry | : | |
| | : | Group Art Unit: |
| Serial No.: | : | |
| | : | Examiner: |
| Filed: | : | |
| | : | |
| For: LIQUID REFINING DEVICE | : | |
| | : | |

INFORMATION DISCLOSURE STATEMENT

Box Response
NO FEE
Assistant Commissioner for Patents
Washington, D.C. 20231

Sir:

This Information Disclosure Statement, the accompanying references, and the accompanying Form PTO-1449 are being provided in compliance with the duty of disclosure under 37 C.F.R. §1.56.

In accordance with 37 C.F.R. §1.97, this Information Disclosure Statement is not to be construed as a representation that a search has been made or that no other possible material information as defined in 37 C.F.R. §1.56 exists.

The comments contained in this Information Disclosure Statement are believed to constitute a concise explanation of the relevance of each listed reference to the invention claimed in the present application. 37 C.F.R. §1.98(a). These comments, however, are not intended to take the place of the examiner's complete consideration of each listed reference.

REFERENCES

U.S. Patent Documents

| U.S. Patent No. | Inventor | Filing Date | Issue Date |
|-----------------|------------------|----------------|----------------|
| 1,718,800 | Rea | May 17, 1926 | June 25, 1929 |
| 2,472,717 | Morey | April 26, 1947 | June 7, 1949 |
| 2,839,196 | Schwalge | Aug. 9, 1955 | June 17, 1958 |
| 3,756,412 | Barrow | Dec. 2, 1971 | Sept. 4, 1973 |
| 4,006,084 | Priest | Dec. 26, 1974 | Feb. 1, 1977 |
| 4,115,201 | Malec | Jan. 25, 1976 | Sept. 19, 1978 |
| 4,189,351 | Engel | Nov. 18, 1977 | Feb. 19, 1980 |
| 4,146,475 | Forsland | Dec. 1, 1977 | Mar. 27, 1979 |
| 4,289,583 | Engel | Aug. 20, 1979 | Sept. 15, 1981 |
| 4,443,334 | Shugarman et al. | Sept. 15, 1980 | Apr. 17, 1984 |
| 4,349,438 | Sims | July 8, 1981 | Sept. 14, 1982 |
| 4,354,946 | Warlick et al. | July 22, 1981 | Oct. 19, 1982 |
| 4,369,110 | Picek | Aug. 13, 1981 | Jan. 18, 1983 |
| 4,717,474 | Sims | Feb. 20, 1987 | Jan. 5, 1988 |
| 4,943,352 | Lefebvre et al. | June 6, 1988 | July 24, 1990 |
| 4,830,745 | van der Meulen | Sept. 26, 1988 | May 16, 1989 |
| 5,198,104 | Menyhert | Mar. 12, 1991 | Mar. 30, 1993 |
| 5,242,034 | DePaul | Oct. 17, 1991 | Sept. 7, 1993 |
| 5,322,596 | Arntz | Dec. 30, 1992 | June 21, 1994 |
| 5,630,956 | Lynch | June 20, 1995 | May 20, 1997 |
| 5,824,211 | Lowry | May 3, 1995 | Oct. 20, 1998 |
| 5,630,912 | LeFebvre | Jan. 31, 1996 | May 20, 1997 |
| 5,776,315 | Lowry | Apr. 9, 1997 | July 7, 1998 |

U.S. Patent No. 1,718,800 discloses an oil recirculating system for an internal combustion engine, the oil being recirculated by vacuum from the carburetor and maintained at a relatively high temperature by virtue of the oil reservoir being attached to the engine exhaust manifold. Oil is collected in a distilling chamber adjacent the engine exhaust, the theory being that the raised oil temperature will effect distillation and separation of volatile vapor contaminants in the oil.

U.S. Patent No. 2,472,717 discloses an oil evaporation/purification system wherein oil passing through the filter media is intended to drip down, around and over

parallel horizontal fins where the volatile gasses are evaporated off and permitted to rise to the top of the filter unit and escape through a float-and-valve operated vent. Heat for evaporation is supplied by condensation of evaporation gasses that have been heated indirectly, in liquid form, by a heating tube placed inside the vehicle exhaust pipe.

U.S. Patent No. 2,839,196 discloses a combination oil filter and distillation refiner wherein the vaporizing chamber comprises a number of channels adjacent a separate oil heating unit. Oil is forced upwardly through the heated oil channels and back down the inclined sides of the oil channels.

U.S. Patent No. 3,756,412 discloses a similar arrangement wherein filtered oil is forced upwardly through holes in a heating element, thereafter to be collected and gravity-drained off.

U.S. Patent No. 4,006,084 discloses a similar system having a conical vaporization chamber including a vaporization chamber plate having a plurality of concentric stepped horizontal and vertical tiers. The vaporization chamber is heated by a separate heating element above the chamber.

U.S. Patent No. 4,115,201 discloses a similar system wherein the heating element is attached to the top tier, and oil passes over the heating element in order to effect distillation.

U.S. Patent No. 4,189,351 discloses yet another similar system wherein the evaporation plates include vertically projecting evaporation walls. The heater assembly comprises a section having corresponding downwardly projecting walls that are intended to conduct heat from the separate heating unit to the fins in order to effect distillation.

U.S. Patent No. 4,146,475 discloses yet another similar system having an annular stepped evaporation plate, the evaporation chamber being heated by a separate heating element positioned above the center of the evaporation plate, whereby the

filtered oil is metered and squirted against the heating element in order to effect distillation.

U.S. Patent No. 4,289,583 is a continuation-in-part of U.S. Patent No. 4,189,351, and discloses essentially the same thing.

U.S. Patent No. 4,443,334 discloses yet another similar oil distillation unit having an annular stepped evaporation plate, the evaporation plate being essentially hollow and having a plurality of downwardly depending heat transfer fins. Oil distillation is still effected thin-film evaporation as oil flows down the evaporation plate.

U.S. Patent No. 4,349,438 discloses yet a similar system that includes an oil atomization screen for atomizing the oil in order to improve its effective distillation.

U.S. Patent No. 4,354,946 discloses yet another similar system wherein the evaporation plate comprises an inverted stepped annular plate having the electric heating element therein.

U.S. Patent No. 4,369,110 shows yet another similar system having a stepped annular evaporation plate and separate heating element within the evaporation chamber.

U.S. Patent No. 4,717,474 discloses a similar system that incorporates an atomizing nozzle for improving the efficiency of distillation within the distillation chamber.

U.S. Patent No. 4,943,352 discloses another similar system having a vaporization chamber defined by a plurality of annular upstanding fins that cooperate with downwardly depending annular fins formed in the removable cap of the vaporization chamber, which also includes the separate electrical heating element.

U.S. Patent No. 4,830,745 discloses a similar system having a stepped annular evaporation plate. This device includes a vacuum device for maintaining a negative air pressure within the vaporization chamber for optimization.

U.S. Patent No. 3,198,104 discloses yet a similar device having a horizontal evaporation plate with upstanding, vertical, evaporation fins. Heat is provided by a separate electrical heating element.

U.S. Patent No. 5,242,034 discloses yet another similar system having an evaporation plate that incorporates upstanding, vertical fins and a separate electrical heating element.

U.S. Patent No. 5,322,596 incorporates a different design for an oil evaporation unit, the evaporation chamber having a central hub and bottom wall that are directly heated by an electric heating element.

U.S. Patent No. 5,630,956 includes yet another variation of a thin-film evaporation plate type oil distillation device.

U.S. Patent No. 5,824,211 discloses an oil distillation unit having an evaporating chamber that is heated by the oil itself, as opposed to a separate electrical heating element. The evaporation chamber is in the form of a hollow, cylindrical tube.

U.S. Patent No. 5,630,912 discloses a distillation type oil purifying unit that utilizes a spin on filter, the base of the unit forming the evaporation chamber. Filtered oil from the spin on unit flows down into the base and is distributed across a plurality of concentric vertically extending evaporator plates for distillation evaporation.

U.S. Patent No. 5,776,315 discloses a distillation oil evaporation device wherein the evaporation chamber is heated by the incoming oil, as opposed to a separate electrical heating unit. This device also incorporates a metering system for the incoming oil which is resistant to clogging and is easily serviced.

Because of the differing terminology of the various references, the Examiner is respectfully requested to review each of the cited references to be certain that the Examiner concurs with Applicants' understanding and description of each reference. Applicants offer to supply any additional explanation or discussion of the references which the Examiner feels is necessary or desirable and which is requested.

Respectfully submitted,

Charles Andrew Lowry
Charles Andrew Lowry

Dated: July 19, 2000

ATTY DOCKET NO.

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LIST OF PRIOR ART CITED BY APPLICANT

(Use several sheets if necessary)

APPLICANT

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GROUP

1066 U.S. PTO
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|---------------------|-----------------|---------|------------|-------|----------|-------------------------------|
| AA | 1,718,800 | 6/25/29 | Rea | | | |
| AB | 2,472,717 | 6/7/49 | Morey | | | |
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FORM PTO-1449 (Substitute)

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